

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claim Rejections

I. Yudasaka (EP 1085578) in view of Grigoropoulos (US 2004/0137710)

The PTO rejected claims 1-20, 22-30, 63-64, 68, 71, and 74-75 under 35 U.S.C. §103(a) as allegedly being unpatentable over Yudasaka (EP 1085578) in view of Grigoropoulos (US 2004/0137710). Office Action at page 2. Applicants respectfully traverse the rejections on the ground that the PTO has not established a *prima facie* case of obviousness.

“To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” MPEP 2143.03.

Here, the PTO has not established that the cited references teach or suggest all the claim limitations. Neither Yudasaka or Grigoropoulos teach the claim limitation of “co-depositing inorganic semi-conducting nanoparticles as a solid in liquid suspension and dopant on a substrate.” Yudasaka discloses depositing a solution of a precursor of silicon and dopant, not nanoparticles as a solid in liquid suspension and dopant. Grigoropoulos is completely silent on dopants.

Contrary to the assertions in the Office Action, Yudasaka does not disclose a method comprising the step of co-depositing inorganic semi-conducting nanoparticles and dopant on a substrate as in claim 1 of the present application. Instead, Yudasaka describes a method for forming a thin film from a liquid material [0046], and the liquid material is a solution containing the silicon compound of formula Si_nX_m or $\text{Si}_a\text{X}_b\text{Y}_c$ (silicon compound modified by Y, wherein Y is boron or phosphorous). [0056]-[0057]. At best, Yudasaka teaches depositing a compound which serves as a precursor of both silicon and dopant (the silicon compound Si_nX_m is a precursor of silicon, and the silicon compound $\text{Si}_a\text{X}_b\text{Y}_c$ is a precursor of both silicon and dopant), and the decomposition thereof is a chemical transformation, which is excluded from claim 1 by “through a physical change of melting.”

Grigoropoulos does not teach co-depositing nanoparticles with dopant either.

Therefore, Yudasaka and Grigoropoulos together do not teach all the claim limitations as required for establishing a *prima facie* case of obviousness. Accordingly, Applicants respectfully request the reconsideration and withdrawal of the rejections on this ground.

II. Furusawa (WO 00/59044, US equivalent US 6,518,087) in view of Grigoropoulos (US 2004/0137710).

The PTO rejected claims 1-20, 22-30, 63-64, 68, 71, and 74-75 under 35 U.S.C. §103(a) as allegedly being unpatentable over Furusawa et al (WO 00/59044, US equivalent US 6,518,087) in view of Grigoropoulos (US 2004/0137710). Office Action at page 6. Applicants respectfully traverse the rejections on the ground that the PTO has not established a *prima facie* case of obviousness.

Furusawa has a disclosure that is essentially identical to Yudasaka in relevant part (the references are commonly-owned). Therefore, for the same reason set forth above, Furusawa and Grigoropoulos together do not teach all the claim limitations as required for establishing a *prima facie* case of obviousness. Accordingly, Applicants respectfully request the reconsideration and withdrawal of the rejections on this ground.

III. Kamata (US 6,086,945) in view of Grigoropoulos (US 2004/0137710)

The PTO rejected claims 1-20, 22-30, 63-64, 68, 71, and 74-75 under 35 U.S.C. §103(a) as allegedly being unpatentable over Kamata (US 6,086,945) in view of Grigoropoulos (US 2004/0137710). Office Action at page 10. Applicants respectfully traverse the rejections on the ground that the PTO has not established a *prima facie* case of obviousness.

Contrary to the assertions in the Office Action, Kamata does not disclose a method comprising a the step of co-depositing inorganic semi-conducting nanoparticles and dopant on a substrate as in claim 1 of the present application. Instead, in Kamata et al, the silicon particles are fine particles with diameters in range of 1 μ m to 30 μ m. Col. 2, lines 38-40. Particles of these dimensions do not qualify as “nanoparticles.” Moreover, Kamata et al does not teach co-depositing the particles with dopant. Further, Kamata does not teach depositing particles in a suspension. Instead, Kamata teaches deposition by means of plasma spray wherein the particles are first vaporized. Col. 5.

Grigoropoulos does not teach or suggest the limitations that Kamata fails to satisfy.

Therefore, Kamata and Grigoropoulos together do not teach all the claim limitations as required for establishing a *prima facie* case of obviousness. Accordingly, Applicants respectfully request the reconsideration and withdrawal of the rejections on this ground.

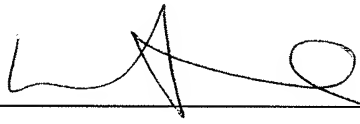
CONCLUSION

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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By 

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The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.